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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/576,291	12/20/2006	Shigeaki Aoki	2006-0527A	4492
513 7590 02/24/2010 WENDEROTH, LIND & PONACK, L.L.P. 1030 15th Street, N.W., Suite 400 East Washington, DC 20005-1503				
EXAMINER LAZORCIC, JASON L				
ART UNIT 1791		PAPER NUMBER		
NOTIFICATION DATE 02/24/2010		DELIVERY MODE ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ddalecki@wenderoth.com  
coa@wenderoth.com

# Office Action Summary

**Application No.**

10/576,291

**Applicant(s)**

AOKI ET AL.

**Examiner**

JASON L. LAZORCIK

**Art Unit**

1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 April 2006.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-12 is/are rejected.  
7) ☒ Claim(s) 1 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 19 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO/SB/22)  
Paper No(s)/Mail Date 4/19/2006; 2/16/2007  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Information Disclosure Statement***

Upon review of Applicants Information Disclosure Statement dated April 19, 2006 it is not evident that the cited patent to Lilly '738 in any manner pertains to the subject matter of the instant application. Applicant is respectfully requested to review the noted documents and either correct the citation if such action is deemed necessary or to provide a brief explanation of the citations relevance to the application.

### ***Claim Objections***

Claim 7 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 7 recites the step of sealing the glass composition of parent claim 1. It is not entirely evident how the step of sealing the glass composition further limits the claimed composition of matter itself.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takagi (WO 03/066539— Please note that US 7,538,050 is employed as an English language equivalent to the WO document) in view of Aldrich et. al. (Physical Review, v74,n11,(1948),pp.1590-1594)**

With respect to Claim 9, the Takagi document discloses (col.4, lines 36-63) a glass composition comprising a helium concentration in the range of Applicants most

preferred, disclosed concentration. The glass is manufactured by bubbling helium gas through a glass melt (col.14, line46 to col. 16, line31).

Although Takagi does not disclose the isotopic ratio of  $\text{He}^3$  to  $\text{He}^4$  in the glass contained helium concentration, Aldrich makes plain that helium derived from natural gas sources (e.g. the most typical industrial source for helium gas) has a  $\text{He}^3/\text{He}^4$  ratio approximately an order of magnitude less than that of atmospheric gas (see Table II). In view of Aldrich, it would appear evident that processing a glass melt by bubbling with He gas derived from natural gas sources would inherently give rise to a  $\text{He}^3/\text{He}^4$  ratio lower than that displayed by atmospheric gas or alternately that such a condition would be reasonably derived by a skilled practitioner through course of performing the Takagi disclosed process with typical, industrial sources of He gas.

Regarding claim10, see Takagi col. 4, lines 36-63)

Regarding claim 11, Takagi teaches that fined glass samples are subject to mass spectrometry analysis to determine the helium concentration. Although Takagi does not disclose that the ratio of  $\text{He}^3/\text{He}^4$  is determined, such a sample analysis would not be construed to patentably distinguish the recited invention over the Takagi process in view of the ordinary level of skill in the art at the time of the invention. That is, simply measuring a physical property of a glass body resulting from a manufacture does not on its face appear to patentably distinguish the method of manufacturing the glass over the process disclosed in the prior art. With respect to this measurement process, Applicant is kindly directed to the comments under the Allowable Subject matter below.

Regarding claim 12, see Aldrich Table II (pg 1592) which demonstrates that typical natural gas sources of helium present  $\text{He}^3:\text{He}^4$  ranging from approximately 0.5 to  $5 \times 10^{-7}$  which falls within the range as recited in the instant claim.

With respect to claim 1, the Takagi document discloses (col.4, lines 36-63) a glass composition comprising a helium concentration in the range of Applicants most preferred, disclosed concentration. The glass is manufactured by bubbling helium gas through a glass melt (col.14, line46 to col. 16, line31). As noted above, Aldrich demonstrates that helium derived from natural gas sources has a  $\text{He}^3/\text{He}^4$  ratio which is approximately an order of magnitude lower than the  $\text{He}^3/\text{He}^4$  ratio in the atmosphere. Where Takagi discloses that helium bubbled through molten glass dissolves into and is retained by the melt, glass produced by the Takagi process with helium derived from natural gas sources would appear to inherently yield a  $\text{He}^3/\text{He}^4$  ratio which is smaller than the  $\text{He}^3/\text{He}^4$  ratio in the atmosphere.

Regarding claim 2, see Aldrich Table II (pg 1592) which demonstrates that typical natural gas sources of helium present  $\text{He}^3:\text{He}^4$  ranging from approximately 0.5 to  $5 \times 10^{-7}$  which falls within the range as recited in the instant claim.

Regarding Claim 3, see Takagi col. 4, lines 36-63

Regarding Claim 4, see col. 3, lines 7-12

Regarding claim 5, see Samples in Takagi Tables 1-21

Regarding claim 6 and absent compelling evidence to the contrary, it is the Examiners assessment that Takagi teaches at least one glass composition and at least

one glass product which absorbs at least 0.01% of transmitted light for at least a portion of the wavelength range of 200 nm to 1,050 nm

Regarding Claim 7, Takagi teaches (col. 15, lines 27-43) that fired glass samples are sealed in a platinum sample dish of a mass spectrometer

Regarding Claim 8, see Takagi col. 5, lines 7-18

***Allowable Subject Matter***

The following claim amendments, if adopted by Applicant, would be considered to distinguish patentably over the art of record in this application:

The prior art of record does not teach nor reasonably suggest employing a measured value of the  $\text{He}^3/\text{He}^4$  ratio as a means to exercise control over the glass manufacturing process. The Examiner respectfully proposes 1) canceling claims 1-8 drawn to a glass composition and 2) incorporating all of the limitations of claim 11 into independent claim 9 along with a limitation which states, "and setting or changing a production condition for the glass article on the basis of the measured volume ratio".

After careful consideration it is the Examiner's assessment that, no reference viewed alone or in combination reasonably teaches nor suggests a method for manufacturing a glass article as recited in claims 9 and 11 whereby the process conditions are controlled responsive to a measured value of the volume isotope ratio of  $\text{He}^3/\text{He}^4$ .

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

**Claims 1-8 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. US 7,538,050 in view of Takagi (WO 03/066539– Please note that US 7,538,050 is employed as an English language equivalent to the WO document) in view of Aldrich et. al. (Physical Review, v74,n11,(1948),pp.1590-1594) as applied in the prior art rejections of claims 1-12 above**

Claim 1 of the '050 patent is directed to a glass composition comprising He in an amount of 0.01 to 2 microliters per gram. Although the '050 claimed invention does not recite the He3/He4 ratio as set forth in claim 1 of the instant application, such a limitation is not deemed to patentably distinguish the glass composition of the instant invention over that in the '050 patent when viewed in light of Takagi and Aldrich.



That is, Takagi makes plain that a glass composition comprising helium in the recited concentration range may be manufactured by bubbling helium gas into the glass melt in an analogous fashion to the disclosed method for manufacturing the glass in the '050 patent. Aldrich makes plain that conventional industrial sources of He gas display a He3/He4 ratio far below that displayed in atmospheric helium gas. For reasons detailed more fully in the prior art rejection above, incorporating a helium content in accordance with the '050 patent into a glass composition by bubbling helium gas through the glass melt as per Takagi would appear to inherently result in the helium isotope ratio as recited in claim 1 of the instant application. For at least this reason, the invention of claim 1 is not patentably distinct from the glass composition set forth in the '050 patent.

The obviousness double patenting rejection of dependent claims 2-8 follow in accordance with the prior art rejection of the same claims above.

**Claims 1-8 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. US 7,582,581 in view of Takagi (WO 03/066539 – Please note that US 7,538,050 is employed as an English language equivalent to the WO document) and Aldrich et. al. (Physical Review, v74,n11,(1948),pp.1590-1594) as applied in the prior art rejections of claims 1-12 above**

Claim 1 of the '581 patent is directed to a glass composition comprising helium in an amount of from 0.0001 to 2 microliters per gram. The obviousness-type double

patenting rejection of claims 1-8 over the '581 patent parallel the rationale set forth above with respect to the '050 patent.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON L. LAZORCIK whose telephone number is (571)272-2217. The examiner can normally be reached on Monday through Friday 8:30 am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jason L Lazorcik/

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Primary Examiner, Art Unit 1791